

## CLAIMS

What is claimed is:

1. A linear compressor comprising  
a casing;  
a driving unit provided within the casing;  
a compressing unit driven by the driving unit, compressing refrigerant;  
a supporting spring elastically supporting the compressing unit;  
a projection projecting from one of the compressing unit and a ceiling part of the casing; and  
a stopper provided in a remaining one thereof, movably accommodating the projection within a predetermined movable range.
2. The linear compressor according to claim 1, wherein the compressing unit comprises:  
a cylinder block provided within the casing, forming a compressing chamber;  
a piston installed to reciprocate within the compressing chamber;  
a movable unit connected to the piston, reciprocating together with the piston; and  
a vibrating member disposed over the movable unit, increasing a reciprocating motion of the piston and the movable unit.
3. The linear compressor according to claim 2, further comprising:  
a supporting member combined with a top of the vibrating member, wherein the projection projects toward an inner ceiling part of the casing from a top of the supporting member and the stopper is provided in the inner ceiling part of the casing to accommodate the projection.

4. The linear compressor according to claim 2, further comprising:  
a supporting member combined with a top of the vibrating member, wherein the projection projects toward the supporting member from an inner ceiling part of the casing and the stopper is provided on a top of the supporting member to accommodate the projection.
5. The linear compressor according to claim 3, wherein the supporting member comprises:  
a combining part combined with the top of the vibrating member, radially extending downward from a center of the supporting member.
6. The linear compressor according to claim 4, wherein the supporting member comprises:  
a combining part combined with the top of the vibrating member, radially extending downward from a center of the supporting member.
7. The linear compressor according to claim 5, wherein the projection comprises:  
an opening formed therein along a vertical direction.
8. The linear compressor according to claim 6, wherein the projection comprises:  
an opening formed therein along a vertical direction.
9. The linear compressor according to claim 1, wherein the projection and the stopper have a common shape.
10. The linear compressor according to claim 9, wherein the projection and the stopper have a cylindrical shape.
11. A linear compressor having a casing with a compressing unit disposed therein to compress refrigerant, and a supporting spring elastically supporting the compressing unit, comprising:

a projection; and

a stopper, the projection and the stopper having corresponding structures, each of the projection and stopper being attached to a respective one of the compressing unit and a ceiling part of the casing such that the compressing unit is prevented from moving outside of a predetermined movable range.

12. A linear compressor having a casing with a compressing unit disposed therein to compress refrigerant, and a supporting spring elastically supporting the compressing unit, comprising:

a collision prevention unit to prevent a collision between the compressing unit and an inner wall of the casing by limiting a movement of the compressing unit from moving outside of a predetermined movable range toward an inner wall of the casing.

13. A linear compressor, comprising:

a casing;

a compressing unit disposed within the casing to compress refrigerant;

a supporting spring movably supporting the compressing unit;

a projection projecting from one of the compressing unit and a ceiling part of the casing; and

a stopper provided in a remaining one of the compressing unit and a ceiling part of the casing to movably accommodate the projection within a predetermined movable range.

14. The linear compressor according to claim 13, wherein the compressing unit comprises:

a cylinder block to form a compressing chamber;

a piston installed to reciprocate within the compressing chamber; and

a movable unit connected to the piston to reciprocate together with the piston.

15. The linear compressor according to claim 14, further comprising:  
a vibrating member disposed adjacent to the movable unit to increase a reciprocating motion of the piston and the movable unit; and  
a supporting member combined with a top of the vibrating member, wherein the projection projects toward an inner ceiling part of the casing from a top of the supporting member and the stopper is provided at the inner ceiling part of the casing to accommodate the projection.

16. The linear compressor according to claim 14, further comprising:  
a vibrating member disposed adjacent to the movable unit to increase a reciprocating motion of the piston and the movable unit; and  
a supporting member combined with a top of the vibrating member, wherein the projection projects toward the supporting member from an inner ceiling part of the casing and the stopper is provided at a top of the supporting member to accommodate the projection.

17. The linear compressor according to claim 15, wherein the supporting member comprises:  
one or more combining parts coupled with the top of the vibrating member, radially extending downward from a center of the supporting member.

18. The linear compressor according to claim 16, wherein the supporting member comprises:  
one or more combining parts coupled with the top of the vibrating member, radially extending downward from a center of the supporting member.

19. The linear compressor according to claim 17, wherein the projection comprises:  
an opening formed therein along a vertical direction.

20. The linear compressor according to claim 18, wherein the projection comprises:  
an opening formed therein along a vertical direction.
21. The linear compressor according to claim 13, wherein the projection and the stopper have a common shape.
22. The linear compressor according to claim 21, wherein the projection and the stopper have a cylindrical shape.
23. The linear compressor according to claim 19, further comprising:  
a stationary shaft passing through the opening when engaging the movable unit and the vibrating member to facilitate an engagement operation.
24. The linear compressor according to claim 20, further comprising:  
a stationary shaft passing through the opening when engaging the movable unit and the vibrating member to facilitate an engagement operation.